

Integrales

- $$\int \sqrt{x}(x^2 - 2) dx$$

$$\int x^{5/2} - 2\sqrt{x} dx$$

$$\int x^{5/2} dx - 2 \int x^{1/2} dx$$

$$\frac{x^{7/2}}{7/2} - 2 \frac{x^{3/2}}{3/2} + c$$
 - $\frac{2\sqrt{x^7}}{7} + \frac{4\sqrt{x^3}}{3} + c$
 - $\frac{2\sqrt{x^5}}{7} - \frac{4\sqrt{x^2}}{3} + c$
 - $\frac{2\sqrt{x^3}}{7} + \frac{4\sqrt{x^7}}{3} + c$
 - $\frac{2\sqrt{x^7}}{7} - \frac{4\sqrt{x^3}}{3} + c$
- $$\int (4w - 1)^3 dw \rightarrow \int (4w)^3 - 3(4w)^2(-1) + 3(4w)(-1)^2 - (-1)^3 dw$$

$$64 \int w^3 dw + 48 \int w^2 dw + 12 \int w dw - 1 \int dw$$
 - $16w^3 + 16w^2 + 6w + c$
 - $16w^4 + 16w^3 + 6w^2 - w + c$
 - $16w^4 + 16w^3 + 6w^2 + w + c$
 - $16w^3 + 16w^2 + 6w - c$
- $$\int_{-1}^3 6x(x - 1) dx \rightarrow \int_{-1}^3 6x^2 - 6x$$

$$2x^3 - 3x^2$$

$$(2(3)^3 - 3(3)^2) - (2(-1)^3 - 3(-1)^2)$$

$$(54 - 27) - (-2 - 3)$$
 - 32
 - 86
 - 42
 - 33

4. $\int x^2 \tan^{-1} x \, dx$

$$\tan^{-1} x \times \frac{x^3}{3} - \int \frac{x^3}{3} \times \frac{1}{1+x^2} dx$$

$$\frac{x^3}{3} \tan^{-1} x - \frac{1}{3} \int \frac{x^3}{1+x^2} dx$$

$$\frac{x^3}{3} \tan^{-1} x - \frac{1}{3} [(1+x^2) \frac{x^4}{4} - \int \frac{x^4}{4} 2x dx]$$

$$\frac{x^3}{3} \tan^{-1} x - \frac{1}{3} [\frac{x^4}{4} + \frac{x^6}{4} - \frac{1}{2} \int x^5 dx]$$

A) $\frac{x^3}{3} \tan^{-1} x - \frac{x^4}{12} - \frac{x^6}{12} + \frac{x^6}{32} + c$

B) $\frac{x^2}{2} \tan^{-1} x - \frac{x^4}{12} - \frac{x^6}{12} + \frac{x^6}{32} + c$

C) $\frac{x^2}{2} \tan^{-1} x + \frac{x^4}{12} - \frac{x^6}{12} + \frac{x^6}{32} + c$

D) $\frac{x^3}{3} \tan^{-1} x + \frac{x^4}{12} - \frac{x^6}{12} - \frac{x^6}{32} + c$

$$u = \tan^{-1} x \quad du = \frac{1}{1+x^2} dx$$

$$v = \frac{x^3}{3} \quad dv = x^2 dx$$